


PATENT COOPERATION TREATY

WIPO 2003/04210
PCT/JP2004/013864

From the INTERNATIONAL BUREAU

PCT

FIRST NOTICE INFORMING THE APPLICANT OF
THE COMMUNICATION OF THE INTERNATIONAL
APPLICATION (TO DESIGNATED OFFICES WHICH
DO NOT APPLY THE 30 MONTH TIME LIMIT
UNDER ARTICLE 22(1))

<p>To:</p> <p>OKABE, Masao No. 602, Fuji Bldg. 2-3, Marunouchi 3-chome Chiyoda-ku, Tokyo 1000005 JAPON</p> 
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(PCT Rule 47.1(c))

Date of mailing (day/month/year) 06 May 2005 (06.05.2005)		IMPORTANT NOTICE	
Applicant's or agent's file reference 10003418WO01			
International application No. PCT/JP2004/013864	International filing date (day/month/year) 15 September 2004 (15.09.2004)	Priority date (day/month/year) 30 September 2003 (30.09.2003)	
Applicant CANON KABUSHIKI KAISHA et al			

1. **ATTENTION:** For any designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002 (30 months from the priority date), does apply, please see Form PCT/IB/308(Second and Supplementary Notice) (to be issued promptly after the expiration of 28 months from the priority date).

2. Notice is hereby given that the following designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002, does not apply, has/have requested that the communication of the international application, as provided for in Article 20, be effected under Rule 93bis.1. The International Bureau has effected that communication on the date indicated below:
14 April 2005 (14.04.2005)

CH

In accordance with Rule 47.1(c-bis)(i), those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

3. The following designated Offices, for which the time limit under Article 22(1), as in force from 1 April 2002, does not apply, have not requested, as at the time of mailing of the present notice, that the communication of the international application be effected under Rule 93bis.1:

LU, SE, TZ, UG, ZM

In accordance with Rule 47.1(c-bis)(ii), those Offices accept the present notice as conclusive evidence that the Contracting State for which that Office acts as a designated Office does not require the furnishing, under Article 22, by the applicant of a copy of the international application.

4. TIME LIMITS for entry into the national phase

For the designated Office(s) listed above, and unless a demand for international preliminary examination has been filed before the expiration of 19 months from the priority date (see Article 39(1)), the applicable time limit for entering the national phase will, subject to what is said in the following paragraph, be 20 MONTHS from the priority date.

In practice, time limits other than the 20-month time limit will continue to apply, for various periods of time, in respect of certain of the designated Offices listed above. For regular updates on the applicable time limits (20 or 21 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

It is the applicant's sole responsibility to monitor all these time limits.

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.+41 22 740 14 35</p>	<p>Authorized officer</p> <p>Masashi Honda</p> <p>Facsimile No.+41 22 338 70 10</p>
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PATENT COOPERATION TREATY



From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To: OKABE, Masao No. 602, Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 1000005 Japan

**NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION**

(PCT Rule 44.1)

Date of mailing <i>(day/month/year)</i>	11. 1. 2005
Applicant's or agent's file reference 10003418W001	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/JP 2004 / 013864	International filing date <i>(day/month/year)</i>
15. 09. 2004	
Applicant CANON KABUSHIKI KAISHA	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders:

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/JP Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Authorized officer Commissioner of the Patent Office Telephone No. +81-3-3581-1101 Ext. 3477
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 10003418WO01	<div style="display: flex; justify-content: space-between;"> <div> FOR FURTHER ACTION </div> <div> <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small> </div> </div>	
International application No. PCT/JP 2004/013864	International filing date (day/month/year) 15.09.2004	(Earliest) Priority Date (day/month/year) 30.09.2003
Applicant <div style="text-align: center; font-weight: bold;">CANON KABUSHIKI KAISHA</div>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (See Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP 2004/013864

A. CLASSIFICATION OF SUBJECT MATTER		
Int.Cl ⁷ H01M 8/02, H01M 8/10		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Int.Cl ⁷ H01M 8/02, H01M 8/10		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Japanese Utility Model Gazette 1922-1996, Japanese Publication of Unexamined Utility Model Applications 1971-2004, Japanese Registered Utility Model Gazette 1994-2004, Japanese Gazette Containing the Utility Model 1996-2004		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 94/14203 A1 (FRAUNHOFER-GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG E.V.) 1994.06.23, Whole document & JP 8-5042943 A & US 5723086 A ⑩ JP 8-504293 (1/3 Tel ⑩ OGAWA R)	1, 3, 4, 6 2, 5
Y	WO 02/33709 A1 (UNI-CHEMICAL CO., LTD.) 2002.04.25, Whole document & JP 2003-86021 A & EP 1339072 A1 & US 2004/0044160 A1	2, 5
A	JP 5-109419 A (MITSUBISHI HEAVY IND. LTD.) 1993.04.30 (None Family)	1-6
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
22.12.2004		11.1.2005
Name and mailing address of the ISA/JP		Authorized officer
Japan Patent Office		OGAWA SUSUMU
3-4-3, Kasumigasaki, Chiyoda-ku, Tokyo 100-8915, Japan		4X 8414
		Telephone No. +81-3-3581-1101 Ext. 3477

INTERNATIONALSEARCHREPORT

International application No.

PCT/JP2004/013864**C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, A	WO 03/081707 A1 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.) 2003.10.02 & JP 2003-282093 A & EP 1429408 A1	1-6

PATENT COOPERATION TREATY



From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

OKABE, Masao

**No. 602, Fuji Bldg., 2-3,
Marunouchi
3-chome, Chiyoda-ku, Tokyo
1000005
Japan**

Date of mailing
(day/month/year)

11. 1. 2005

Applicant's or agent's file reference

100003418W001

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/ 013864

International filing date (day/month/year)

15. 09. 2004

Priority date (day/month/year)

30. 09. 2003

International Patent Classification (IPC) or both national classification and IPC

Int.Cl. **H01M 8/04, H01M 8/10**

Applicant

CANON KABUSHIKI KAISHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Japan Patent Office

3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan

Authorized officer

OGAWA SUSUMU

Telephone No. **+81-3-3581-1101 Ext. 3477**

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/013864

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/ 013864

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>2, 5</u>	YES
	Claims	<u>1, 3, 4, 6</u>	NO
Inventive step (IS)	Claims	<u>none</u>	YES
	Claims	<u>1-6</u>	NO
Industrial applicability (IA)	Claims	<u>1-6</u>	YES
	Claims	<u>none</u>	NO

2. Citations and explanations

D1:WO 94/14203 A1

**(FRAUNHOFER-GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN
FORSCHUNG E.V.)1994.06.23 & JP 8-5042943 A & US 5723086 A**

D2:WO 02/33709 A1

**(UNI-CHEMICAL CO.,LTD.)2002.04.25,Whole document & JP 2003-86021 A & EP
1339072 A1 & US 2004/0044160 A1**

The subject matter of claim 1,6 does not meet the requirement of novelty and does not appear to involve an inventive step in view of the D1 cited in the ISR.

D1 discloses a proton-exchange membrane fuel cell comprising a membrane electrode assembly for a proton-exchange membrane fuel cell,the membrane electrode assembly comprising a polymer electrolyte membrane and an electrode catalyst layer,wherein a part of the polymer electrolyte membrane infiltrates into the electrode catalyst layer,and wherein the polymer electrolyte membrane is formed by polymerizing a composition containing a compound having proton conductivity and a compound having activity to an active energy ray.

The subject matter of claim 3,4 does not meet the requirement of novelty and does not appear to involve an inventive step in view of the D1 cited in the ISR.

D1 discloses a production method for a membrane electrode assembly for a proton-exchange membrane fuel cell,the assembly comprising a polymer electrolyte membrane and an electrode catalyst layer,a part of the polymer electrolyte membrane infiltrates into the electrode catalyst layer,the production method comprising the steps of:coating the electrode catalyst layer with a composition containing a compound having a proton conductivity and compound having activity to an active energy ray,to form a precursor layer of the polymer electrolyte membrane composed of the composition,a part of the composition infiltrating into the electrode catalyst layer; and polymerizing the composition by irradiating the precursor layer with the active energy ray,to form a polymer electrolyte membrane a part of which infiltrates into the electrode catalyst layer.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/013864

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box No. V

The subject matter of claim 2,5 does not appear to involve an inventive step in view of the D1 and D2 cited in the ISR.

A skilled person in the art would easily carry out applying the technical matter, disclosed in D2, a reinforcement member composed of an electrical insulator is provided inside the polymer electrolyte membrane, for the polymer electrolyte membrane disclosed in D1.